A20

64.   (Amended) The optical device according to claim 63, wherein the optical device comprises an electroluminescent device.

65.   (Amended) An electroluminescent device comprising an anode layer, a cathode layer and a layer of a polymer according to claim 1 situated between the anode layer and the cathode layer.

REMARKS

The above-identified application has been amended to delete the presence of improper multiple dependent claims. No new matter has been introduced by these amendments. An amemded form of claims 2, 6, 8, 9, 12, 13, 15, 17,18, 22-25, 27, 28, 33, 36, 37, 39, 41, 42, 44, 46, 47, 50, 54, 55, 57, 59, 61, and 63-65 is attached for the Exaiminer's convenience pursuant to new rule 37 C.F.R. §1.21(c)(1)(ii). This paper is not intended to be entered.

The examiner is respectfully requested to consider the above preliminary amendment prior to examination of the application.

If there are any other fees due in connection with the filing of this response, please charge the fees to Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: September 12, 2001   By: _____
                                        Ernest F. Chapman
                                        Reg. No. 25,961

EFC/FPD/gah

198904v1   -13-

APPENDIX TO PRELIMINARY AMENDMENT OF SEPTEMBER 12, 2001

2.   An organic polymer according to [any one of the preceding claims] <u>claim 1</u>, wherein the first region comprises a first monomer comprising a substituted or unsubstituted aromatic or heteroaromatic group.
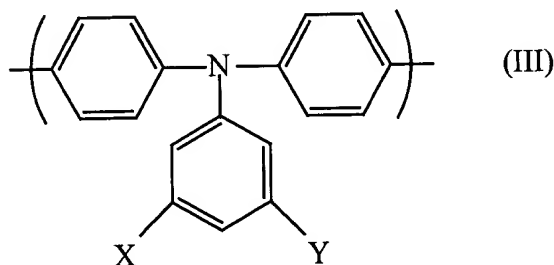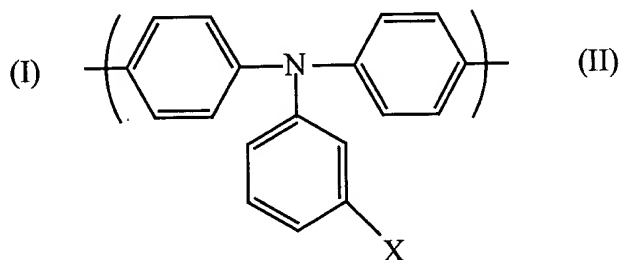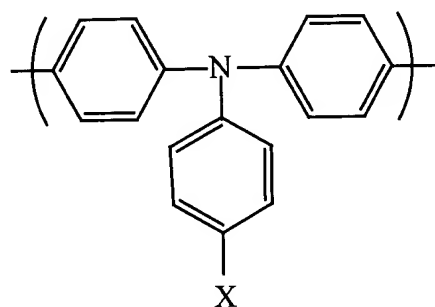
6.   An organic polymer according to [any on of claims 1 to 5] <u>claim 1</u>, wherein the second region comprises a second monomer comprising a substituted or unsubstituted aromatic or heteroaromatic group.

8.   An organic polymer according to claim 6 [or 7], wherein at least one Ar comprises a substituted or unsubstituted phenyl group.

9.   An organic polymer according to claim 7 [or 8], wherein at least one Ar comprises a substituted or unsubstituted aromatic or heteroaromatic side group that is pendent to the polymer backbone.

12.   An organic polymer according to [any of claims 9 to 11] <u>claim 9,</u> wherein the side group has a substituent group comprising a substituted or unsubstituted alkyl, perfluoroalkyl, alkylaryl, arylalkyl, heteroaryl, aryl, alkoxy, thioalkyl or cyano group.

-14-

198904v1

13.   An organic polymer according to [any one of claims 7 to 12] <u>claim 7</u>, wherein the triarylamine unit comprises a group having a formula as shown in any one of Formulas I, II, or III:

where X and Y are the same or different and are substituent groups.
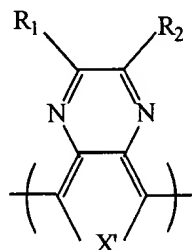
15.   An organic polymer according to claim 13 [or 14], wherein one or more of X, Y, A, B, C and D is independently selected from the group consisting of hydrogen, alkyl, aryl, perfluoroalkyl, thioalkyl, cyano, alkoxy, heteroaryl, alkylaryl, and arylalkyl groups.

17.   An organic polymer according to claim 15 [or 16], wherein X and Y or A, B, C and D are the same.

198904v1   -15-

18.   An organic polymer according to [any one of the preceding claims] claim 1, wherein the third region comprises a third monomer comprising a substituted or unsubstituted aromatic or heteroaromatic group.

22.   An organic polymer according to claim 20 [or 24], wherein Ar_1, or Ar_2 independently comprises a substituted or unsubstituted, fused or unfused benzene, thiophene, furan, quinoxaline, biphenyl or fluorene group.
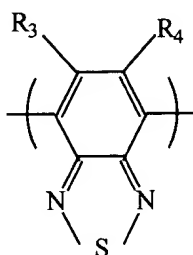
23.   An organic polymer according to [any one of claims 19 to 22] claim 19, wherein the third monomer comprises a group having a formula as shown in Formula VIII:
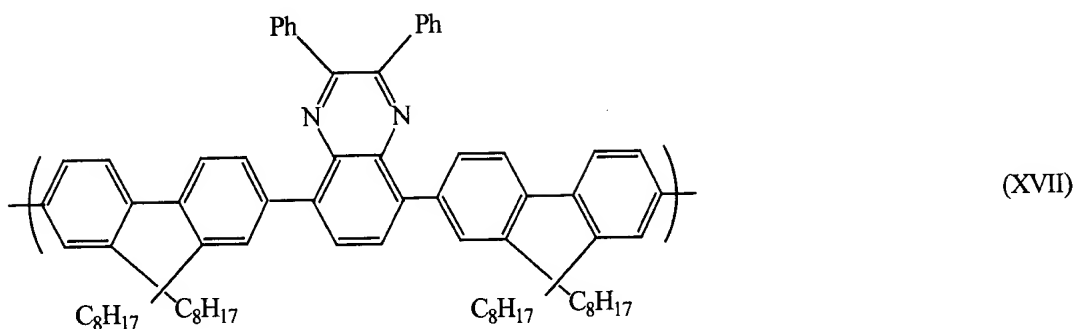

(VIII)

wherein X' is $RC=CR$ or S and R_1, and R_2 are the same or different and are each a substituent group.

24.   An organic polymer according to [any one of claims 19 or 22] <u>claim 19</u>, wherein the third monomer comprises a group having a formula as shown in Formula XI:

$$R_3, R_4$$

(XI)

wherein R_3 and R_4 are the same or different and are each independently a substituent group.

25.   An organic polymer according to claim 23 [or 24], wherein one or more of R_1, R_2, R_3 and R_4 is each independently selected from hydrogen, alkyl, aryl, perfluoroalkyl, thioalkyl, cyano, alkoxy, heteroaryl, alkylaryl, arylalkyl, pyridine or furan.
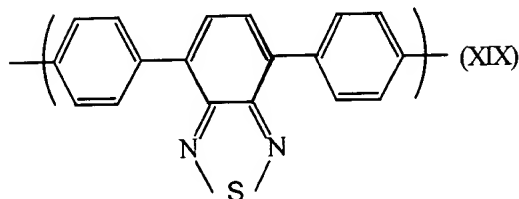
27.   An organic polymer according to [any one of claims 23, 25 or 26] <u>claim 23</u>, wherein the third monomer comprises a group having a formula as shown in any one of Formulas XIII to XVII:
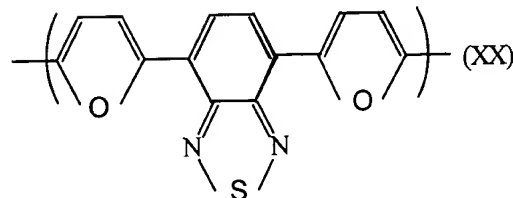
(XIII)

(XVI)

(XV)

(XVI)
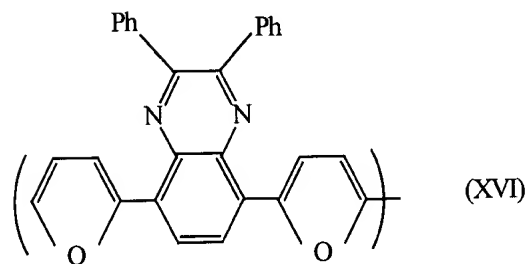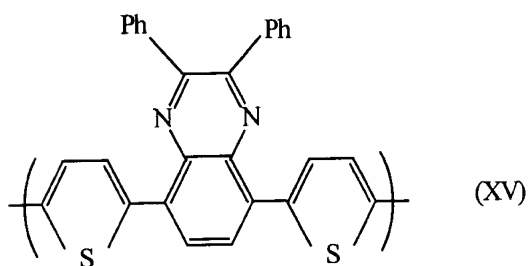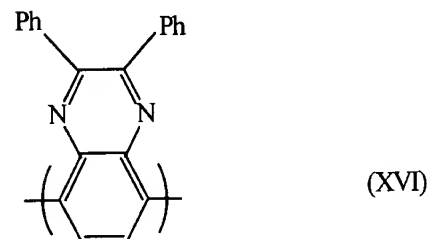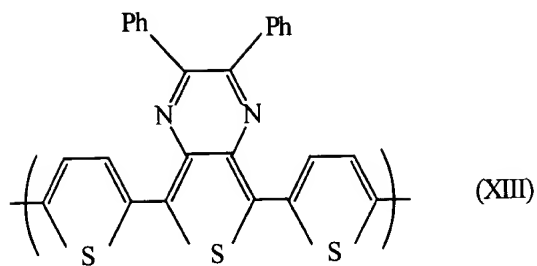
(XVII)

28.   An organic polymer according to [any one of claims 23 to 25] claim 23,

wherein the third monomer comprises a group having a formula as shown in any one of
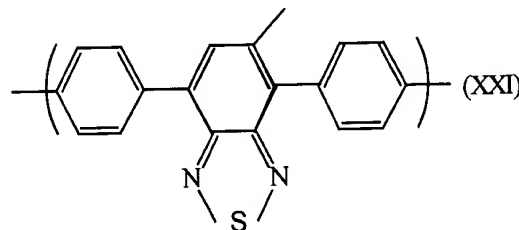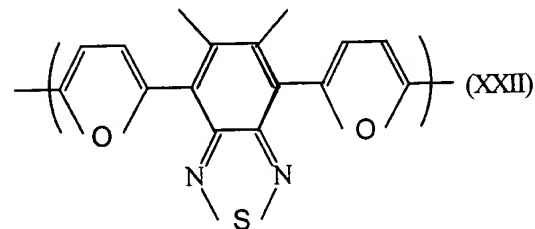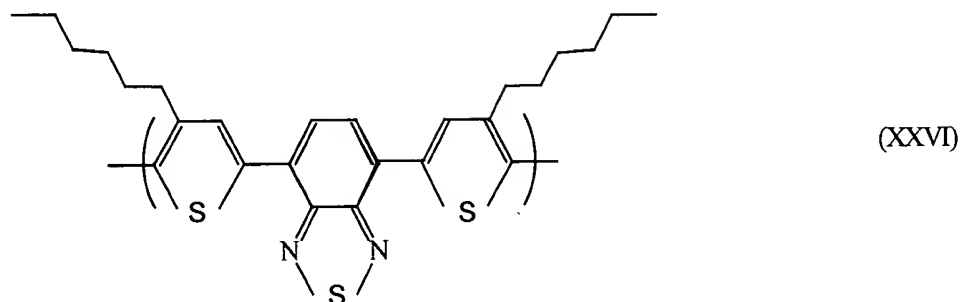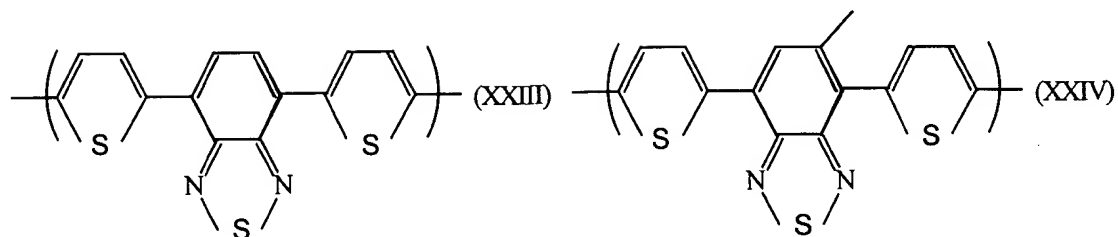
Formulas XVIII to XXVI:
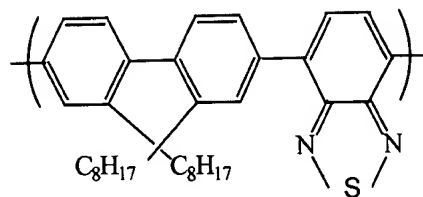
(XVIII)

(XIX)

(XX)

(XXI)

(XXII)

(XXIII)

(XXIV)

(XXV)

(XXVI)

33.   An organic polymer according to [any one of claims 30 to 32] <u>claim 30</u>, wherein at least one Ar comprises a substituted or unsubstituted aromatic or heteroaromatic side group that is pendent to the polymer backbone.

36.   An organic polymer according to [any one of claims 33 to 35] <u>claim 33</u>, wherein the side group has a substituent group comprising hydrogen or a substituted or unsubstituted alkyl, perfluoroalkyl, alkylaryl, arylalkyl, heteroaryl, aryl, alkoxy, thioalkyl or cyano group.

37.   An organic polymer according to claim 35 [or 36], wherein the triarylamine unit comprises a group having a formula as shown in Formula IV
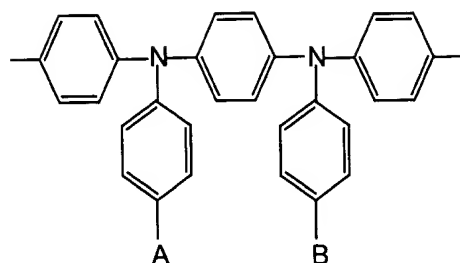
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

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-20-

(IV)

wherein A and B are the same or different and are substituent groups.

39.   An organic polymer according to [any one of claims 1 to 38] claim 1, wherein the first region additionally comprises a fourth monomer comprising a further substituted or unsubstituted aromatic or heteroaromatic group.
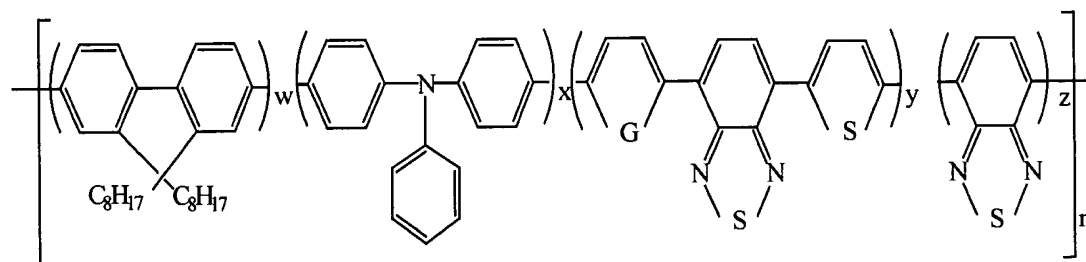
41.   An organic polymer according to [any one of claims 6 to 40] claim 6, wherein the second region additionally comprises a fifth monomer comprising a further second monomer as defined in [any one of claims 6 to 17] claim 6, which is different from the second monomer.

42.   An organic polymer according to [any one of the preceding claims, comprising:

(i)   a first region for transporting negative charge carriers and having a first bandgap defined by a first LUMO level and a first HOMO level;

(ii)   a second region for transporting positive charge carriers and having a second bandgap defined by a second LUMO level and a second HOMO level; and

(iii) a third region for accepting and combining positive and negative charge carriers to generate light and having a third bandgap defined by a third LUMO level and a third HOMO level,

wherein each region comprises one or more monomers and the quantity and arrangement of the monomers in the organic polymer is selected so that the first, second and third bandgaps are distinct from one another in the polymer] and comprising all three regions.

44.   An organic polymer according to claim 42 [or 43] having a formula as shown in Formula XXVIII:

XXVIII

wherein $w + x + y + z = 1$, $w \geq 0.5$, $0 \leq x + y + z \leq 0.5$ and $n \geq z$.
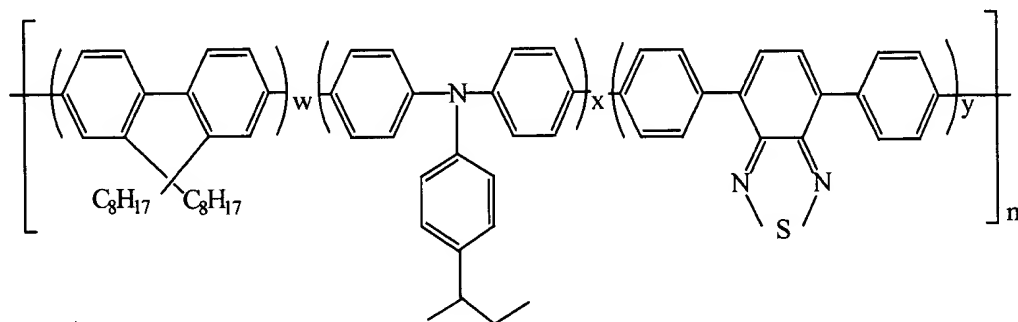
46. An organic polymer according to claim 42 [or 45], having a formula as shown in Formula XXIX:

(XXIX)

wherein $w + x + y = 1$, $w \geq 0.5$, $0 \leq x + y \leq 0.5$ and $n \geq 2$.

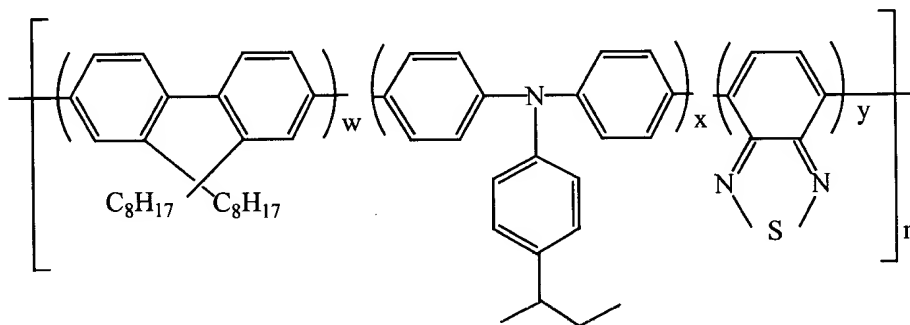47. An organic polymer according to claim 42 [or 45], having a formula as shown in Formula XXX:

(XXX)

wherein $w + x + y = 1$, $w \geq 0.5$, $0 \leq x + y \leq 0.5$ and $n \geq 2$.

50.   An organic polymer according to [any one claims 1 to 41] claim 1, comprising:

(i)   a first region for transporting negative charge carriers and having a first bandgap defined by a first LUMO level and a first HOMO level; and

(ii)   a second region for transporting positive charge carriers and having a second bandgap defined by a second LUMO level and a second HOMO level; and wherein each region comprises one or more monomers and the quantity and arrangement of the monomers within the organic polymer is selected so that the first and second bandgaps are distinct from one another in the polymer.

54.   An organic polymer according to [any one of claims 50 to 53] claim 50, which is blended with a light emissive material.

55.   An organic polymer according to [any one of claims 1 to 41] claim 1, comprising:

(i)   a first region for transporting negative charge carriers and having a first bandgap defined by a first LUMO level and a first HOMO level; and

(ii)   a third region for accepting and combining positive and negative charge carriers to generate light and having a third bandgap defined by a third LUMO level and a third HOMO level, wherein each region comprises one or more monomers and the quantity and arrangement of the monomers in the organic polymer is selected so that the first and third bandgaps are distinct from one another in the polymer.

57.   An organic polymer according to claim 55 [or 56], which is blended with a hole transporting material.

59.   An organic polymer according to [any one of claims 1 to 41] <u>claim 1</u>, comprising:

(i)   a second region for transporting positive charge carriers and having a second bandgap defined by a second LUMO level and a second HOMO level; and

(ii)   a third region for accepting and combining positive and negative charge carriers to generate light and having a third bandgap defined by a third LUMO level and a third HOMO level,

wherein each region comprises one or more monomers and the quantity and arrangement of the monomers in the organic polymer is selected so that the second and third bandgaps are distinct from one another in the polymer.

61.   An organic polymer according to claim 59 [or 60] which is blended with an electron transporting material.

63.   [Use of] <u>An optical device including</u> a polymer according to [any of the preceding in an optical device] <u>claim 1</u>.

64.   [Use] <u>The optical device</u> according to claim 63, wherein the optical device comprises an electroluminescent device.

65.   An electroluminescent device comprising an anode layer, a cathode layer and a layer of a polymer according to [any one of claims 1 to 62] <u>claim 1</u> situated between the anode layer and the cathode layer.

LAW OFFICES

FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000